DEVIN KORWIN

CREATIVE FUNDA-MENTALS VOL. 1

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FOREWORD

When I was first learning art more seriously, I would often feel like there was something more basic missing in my understanding. I'd look at master work and see traces of knowledge that I wanted to explore but didn't know how. Without the knowledge of the fundamental principles behind art, I felt like I couldn't sincerely express myself. Over time, and with more experience, I learned that there is no secret method or one best way to approach every situation, and it would be boring if there were. We can only gather as many tools as we can, and understand which problems they are best suited to solving. I wanted to write this book to help those on this journey find a path through a, now more than ever, overwhelming sea of information.

Who is this book for? If you have watched an assortment of YouTube tutorials and gathered information from many disparate sources but struggled to combine them into a cohesive, unified set of principles that actually help you *practically* with your drawing and painting, then I hope this serves to fill in some of the gaps and inspires you to come up with your own theories that you test through experience. If you are technically minded, and are comfortable following directions in a tutorial but don't know how to creatively apply those lessons to your own ideas, then I hope this helps to make you more confident in your ability to be artistic. If you have felt like most education has taught you how to work like the teacher with their specific process, but you want to know the basic ideas that led them to their unique style and method in the first place, then I think this book will be of use to you. Most of all, I would hope that a greater understanding of the fundamentals allows a more personal, individual creativity and a greater intimate connection to art in general. I have found nothing to be more fulfilling.

There are some unique joys and also challenges to improving at art. While the fundamental concepts exist independently of any one individual artist, the journey itself must be individual because the whole point is to communicate an idea. While peers, teachers, and masters of the past can be used as a guide, having something interesting and original to say is a question that must be answered from scratch by everyone who wants to be creative. The good news is that by virtue of being an individual your experiences are unique, and taking the time to listen to and follow your own interests without judgment can lead to an honest and sincere body of work. Above all of the technical considerations, work that is sincere and without pretense will always have the greatest weight.

Devin Korwin

01 COMPOSITION & TRIANGLES

One of the most fundamental concepts of painting is that composition has its basis in abstract design. Rather than painting discrete objects, the abstract nature of the composition can be focused on as a way to further the intention of the painting in its entirety.
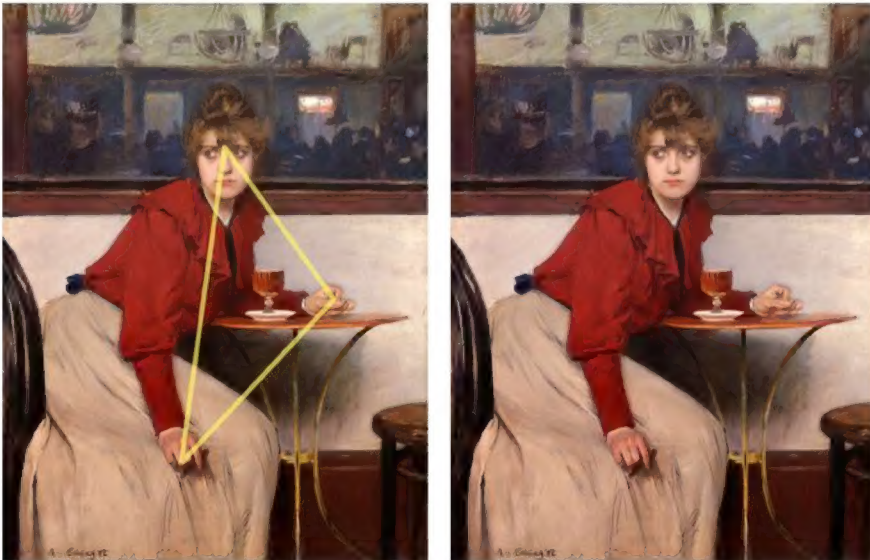

Fig. 1. Ramón Casas *Au Moulin de la Galette,* 1892. The white shape in the mirror could be considered a fourth point, and it is important for balancing the composition, but in this analysis, the head and hands have more psychological interest to us so they sit higher in the hierarchy of importance. The hierarchy of psychological interest highlighted by this triangle is just one of many happening simultaneously, much like harmony and counterpoint in music.

If you start with an idea, and then explore ways to express that idea visually that is in sympathy with your intention, the painting will have a cohesiveness and clarity of focus. Paintings that don't always serve the underlying idea will often have a disconnected, pasted together look where the parts don't relate to the whole. The main idea of this chapter is that composition is not just about drawing discrete objects, like arranging apples in a still life, but that there is an underlying abstract language at work that can be manipulated to achieve artistic goals. When you think of composition as the abstract language of how you will express your idea, the painting tends to paint itself.

"...there is an underlying abstract language at work that can be manipulated to achieve artistic goals."

Improving your composition is mostly a mental change in thinking rather than any one specific technique. Beginners who don't focus on the higher level composition tend to organize discrete objects around a scene, rather than designing an abstract composition that supports the artistic idea, which in some cases happens to be made up of recognizable things. There are countless ways to creatively use design principles to express a creative concept. These examples show specifically how powerful triangles are as a compositional tool. My intention is to show how certain tools can be used to solve artistic problems depending on the need of the artist. One reason that triangles specifically are so powerful and a good introduction to the abstract idea is that they are a great way to keep the eye moving inside the picture frame and the uneven number of points keeps the composition dynamic and interesting.

Fig. 2. Frank Craig *The Heretic*, 1906. In contrast to a triangle, four points arranged inside of a square would generally feel much more static in comparison, and is another tool that could be used depending on the effect desired. The Casas painting in fig. 1 has a feeling of unease as if she is waiting for someone, supported by the non-symmetrical triangle composition, while this Frank Craig painting with a rectangular compostion feels more stable and decorative.

In the Ramon Casas painting in Fig. 1, the compositional device is more obvious, but in the Giovanni Boldini and John Singer Sargent paintings in the next pages it can be harder to see the underlying abstract anatomy of the painting.

Despite these being very busy paintings in terms of density of information, there is an organization to them made up of both a central triangle and a supporting scaffolding of parallel angles that helps to keep clarity. These major angles keep the composition coherent and appealing and support the high frequency detail on top, much like how a simple rhythm section keeps structure during a guitar solo.

The central triangle could even serve a narrative purpose in the Boldini feast scene, suggesting a relationship between the three figures involved. The reason why these three figures make up the triangle is again due to psychological importance. The surrounding figures are extremely simplified and abstracted to lower their place in the hierarchy. There is a huge contrast in the level of rendering of the figures, and the surrounding figures are caricatured, stylized, and simplified to varying degrees.

Fig. 3. Giovanni Boldini *Feast Scene*, 1889. Scaffolding of major angles that helps keep the structure and clarity admist the detail. Major angles also serve a similar function in drawing in general.

This is a very interesting and clever way to use contrast, and supports the creative intention of the painting, suggesting a frozen moment in time and selective focus at a drunken festivity.

In the next example, the John Singer Sargent painting uses a scaffolding of limited parallel angles as well to provide structure. The points of the deer and the figure are focal points not because of value contrast, but narrative and psychological contrast. We instinctively look for figures, faces, and story. Contrast comes in many forms, and human elements and narrative are one of the most important forms of contrast in a painting sitting high atop the hierarchy.
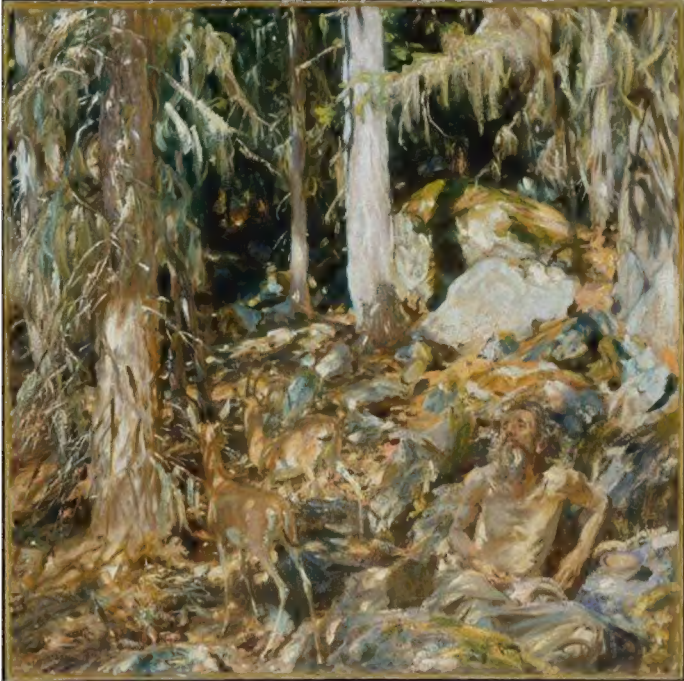
Fig. 4. John Singer Sargent *The Hermit*, 1908. The points of the deer and the figure are focal points not because of value contrast, but narrative and psychological contrast. The close value contrast also provides a narrative meaning, the figure has quite literally become one with nature.

Composition is best used in practical ways like this to support the intention of the painting and is unfortunately often mystified and complicated to the point where it is too esoteric for beginners to become interested in.

If you've ever been confused or discouraged by golden triangles and complicated mathematical divisions then it is worth stepping back and approaching composition more holistically. Abstract design is independent of subject matter and exists in all visual art. The same theme of parallel lines that we saw in these compositions exists in other genres as well and is even a staple of sci-fi design (think Halo architecture). In addition to being used in a macro sense in the large composition, they are also used in the micro in the design of individual elements. The trick then becomes balancing the individual elements in the context of the larger whole. The more you try to be consciously aware of these principles and look for it in paintings that you like, the easier it is to bring it into your own work. Every painting is based on composition at its core so it is very helpful to use it intentionally.

If you've ever tried to draw a specific expression, you know that a tiny change in the angle of the mouth or eyes has a really drastic effect on the overall impression. There is a similar sensitivity in how we respond to composition and it is always helpful to keep that in mind.

While there are no hard rules in painting, there are tools in a toolbox that tend to work for certain situations. The more you experiment, explore, and learn, the more options you have when you need to solve a problem or say a specific thing. Composition is the abstract language used to express ideas in painting, and concepts like this are ways that you can expand your vocabulary or learn how to say an idea with more clarity and focus. For example, letters in an alphabet are an abstract device that hold a deeper meaning, learning about new ways to combine those abstractions is liberating when it comes to communication. Part of visual literacy is seeing the abstractions behind the objects. Having this kind of direct control over a composition can be really freeing, and hopefully leads to more experimentation with design, one of the most important aspects of art in general.

> *"Composition is best used in practical ways... to support the intention of the painting..."*

Fig. 5. John Liberto. A hierarchy of major angles exists in the *micro* as well as the *macro*.

02 PRINCIPLES OF CONTRAST

Contrast is one of the most fundamental concepts in all of art. The comparison of "this vs. that" is the foundation on which much of art, not just painting, is built. One common example is that a neutral grey looks warm next to a cool color and cool next to a warm color. This is due to the way that we perceive things in relation to each other, not in a vacuum, but by comparison.

Fig. 1-2. Lawrence Alma-Tadema *A Roman Emporor*, 1871. A Praetorian guard member pulls aside the curtain to reveal the new emperor of Rome, Claudius. His fearful expression stands in stark contrast to the statue of Augustus to his right, centered in the frame. The choice to center the statue rather than Claudius is a compositional decision in sympathy with the narrative of the painting, giving the title an ironic undertone. The straight line scaffolding of the composition, including the straight perspctive lines, are contrasted by the sweeping gesture of the figures.

If you want to maximize the impact of an abstract design, play up the differences as well as the similarities. Curves look extra curvy next to perfectly straight lines and soft edges are particularly soft next to hard

ones. Because compositional elements like curves, softness, temperature, darkness, etc., all have degrees, it is necessary to set up a hierarchy so that the all of the relative differences are clearly readable.

The Alma-Tadema painting in Figure 1 is a great example of consciously and intelligently breaking the conventional wisdom of composition in order to achieve a desired effect. The composition is perfectly split in two down the center, which is usually considered undesirable because of how static and still the effect is. In this case, it is exactly what is needed to convey the idea intended. In the narrative of the painting, Caligula has been murdered, and the cowardly new emperor Claudius is hiding behind a curtain on the right side of the image. An upright, stately statue of Augustus is dead center in the composition, supported and highlighted by the perspective lines, which conveys the effect of the structure and order of the Roman past.[1] This is balanced and contrasted by the large sweeping gesture of the supporting figures at the sides of the image, the curves of which look particularly lawless in comparison and is perfectly in harmony with the subject of the unruly crowd.

In Figure 3, John Singer Sargent employs a particularly simple and effective expression of contrast. The curve of the profile of the girl is highlighted and accentuated by comparison with the straight line of the wall. It is akin to an architectural crown moulding which works by the same principle. These abstract concepts work best when used in service of an idea, one as simple as wanting to convey the delicate curve of a profile or one as complex as the Alma-Tadema narrative. When the underlying aesthetic principles are sympathetic to the goals of the artist, there is a good chance that the painting can become more than the sum of its parts.

1. Barrow, Rosemary J. (2003). Lawrence Alma-Tadema. (p. 61-62).

50	50	70	30

Fig. 4. A composition split evenly in two often conveys a very static effect, where the eye does not move and explore the composition. Rather than being "wrong," these effects can be utilized where appropriate. The 70/30 split creates an balanced effect with both variety as well as unity making it useful in a broad range of applications, such as for compositional rest areas as well as in the design of individual elements.

Fig. 5. (above) Bernie Fuchs, *Life Magazine Illustration*, 1959.

Fig. 6. (opposite) Bernie Fuchs *Illustration for McCalls (A Small Miracle)*, 1959.

Fig. 7. Bernie Fuchs *(Dawn)*, 1960. The 70:30 split of the focal point of the man's face and his distance in the composition supports the narrative of emotional detachment.
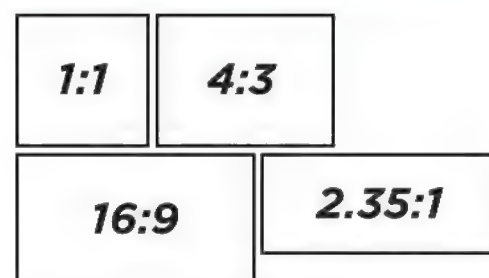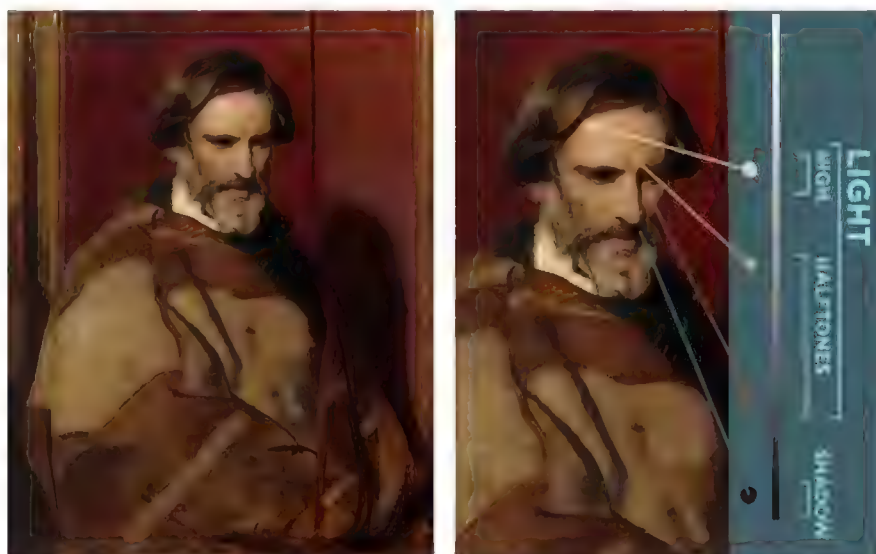

Fig. 8. Examples of common aspect ratios.

The first consideration in composition, and an example of contrast in itself, is aspect ratio of the canvas. The choice of aspect ratio has an effect on every compositional decision that follows because it all must relate to the original relationship of width to height. A square has a ratio of 1:1, or one part tall to one part wide. Another common aspect ratio is 4:3, or 4 parts wide to 3 parts tall. Aspect ratios can be reversed to change the orientation as well. If you are working digitally, instead of cropping arbitrarily, try using some of the presets within the crop tool when starting or reframing a composition. When the process starts with a canvas size that already has an established ratio it is easier to base subsequent decisions, such as further subdivisions, off of that relationship.

> "The comparison of 'this vs. that' is the foundation on which much of art, not just painting, is built."

Those further subdivisons can be based on their own ratios, 70:30 being a very common one. One way to balance areas of concentrated detail and variety in a painting is through the use of rest areas. Bernie Fuchs' illustrations make very apparent use of this tool partially due to the unique demands of the editorial illustration format, but rest areas are found in compositions from every time period.

03 THE OREO COOKIE THEORY

What do values have to do with Oreo cookies and how are they the secret to good painting? John Singer Sargent's teacher stated "The secret of painting is in the half tone of each plane, in economizing the accents and in the handling of the lights." When I read that I was confused and felt like I was missing out on something big. Halftones seemed like a minor consideration to me at the time. I wasn't even exactly clear what they were.

I thought that midtones or halftones were simply transition areas between light and shadow, and that definitely could not be the secret that I was looking for. A major breakthrough for me was when I started to consider halftones as the whole area hit by light, excluding the highlights. Midtones are not part of the shadow at all.

Fig. 1. The three main grouped value areas of a portrait exposed for the light (*see chapter 4*).

Fig. 2. Edwin Landseer *Portrait of John Gibson, R.A.*, ca. 1850. The light side is made up of the specular highlight and the halftones.

When exposing for the lights, shadows will fall into a unified, low-contrast mass, leaving room in the value scale for a variety of tone in the lights that describe each plane. Once the flat shadows are in place, there is more room for information in the lights due to exposure and relative value (*see chapter 4*). There is a subtle gradient as the light falls down the form, but it is very subtle, or else it will start to compete with the shadow value and the value relationships will start to become incorrect.

Fig. 3. *The Oreo Cookie Theory.* Using this principle, we can have one value for the shadow at the bottom of the scale, represented in red (the bottom cookie), a very subtle gradient for the lights, represented in blue (the filling), and one value for the specular highlight, represented in yellow (the top cookie). As long as these values are far enough apart, it will read as light. This principle is foremost about the relationships of the values, not that they necessarily need to be at any absolute point in the scale.

If the range of value in the halftones is too great, they start to become out of key, and the illusion light over form is lost. If I had to give one piece of advice with regards to rendering, it is to keep your values in areas of grouped values close together, and far apart from an area of a different value. Similar within, different between. When the values are kept close, the subtle differences in the values read as planes. I believe this is what Sargent's teacher Carolus-Duran meant when he describes halftones as the secret to painting: "Here lies, he would say, the secret of painting, in the half-tone of each plane, in economizing the accents and in the handling of the lights so that they should play their part in the picture only with a palpable and necessary significance. "[1]

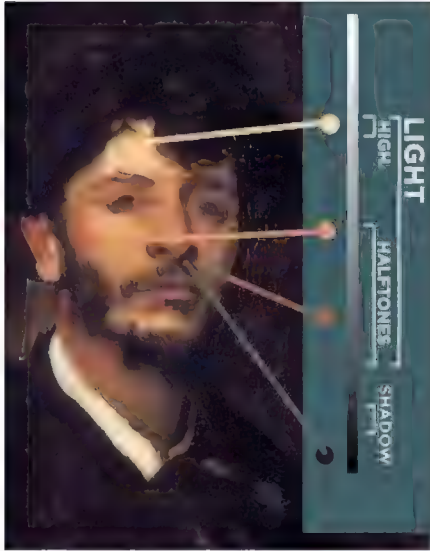1. Charteris, Evan. (1927). John Sargent. (p. 28).

Fig. 4. John Singer Sargent *Portrait of Jean Joseph Marie Carries*, 1880. The light side is made up of the specular highlight and the halftones.
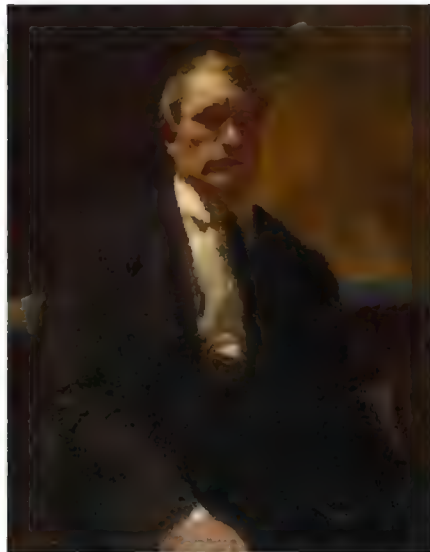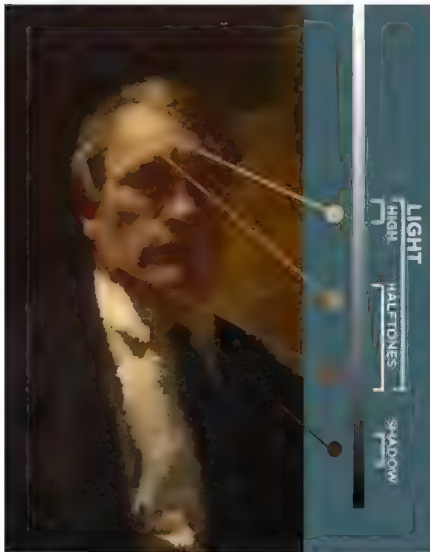
Fig. 5. Alessio Issupoff *Self Portrait*, 1928.

Now that the light and shadow are far apart, the shadow shapes and light shapes can be merged together and used to create an abstract composition, as if you were using strips of construction paper to design. This is an example of the scientific principles of light informing a shorthand that is then used as abstract principles in order to design. In music, natural harmonies are arranged in sympathy with what the composer is intending to convey, and in painting it is the natural principles of light, anatomy, perspective, etc. that are used as the building blocks of a composition.

"...keep your values in areas of grouped values close together, and far apart from an area of a different value. Similar within, different between."

04 EXPOSURE & COMPRESSION

How often do you think about exposure when starting a painting or drawing? How do we go from a lot of information in reality to something we can actually express with our medium? Organizing values and colors is a big part of successful painting and deciding on exposure is the first step in planning that out.

When painting from life, it is tempting to copy the exact colors and values we see literally, especially with even lighting that seems to easily fit within the value range of our medium. With strong light, the problem becomes obvious: paint, pencil, and even digital paint on a backlit screen can't reach the levels of light and dark that we see in the real world. The solution is to compare values and compress, and that way we will be able to translate what we see into an organized and designed composition. Paint from a tube can't be as bright as a lightbulb or as dark as the deepest shadow, so how do we paint them? We can omit information so that the *relationships* of values are correct, reconstruct a world with its own internal logic, and then use this to control the composition.
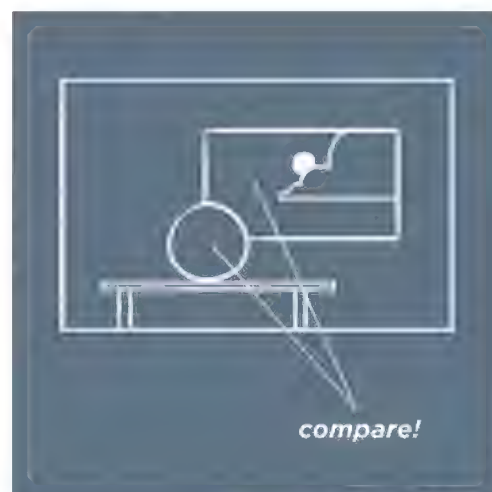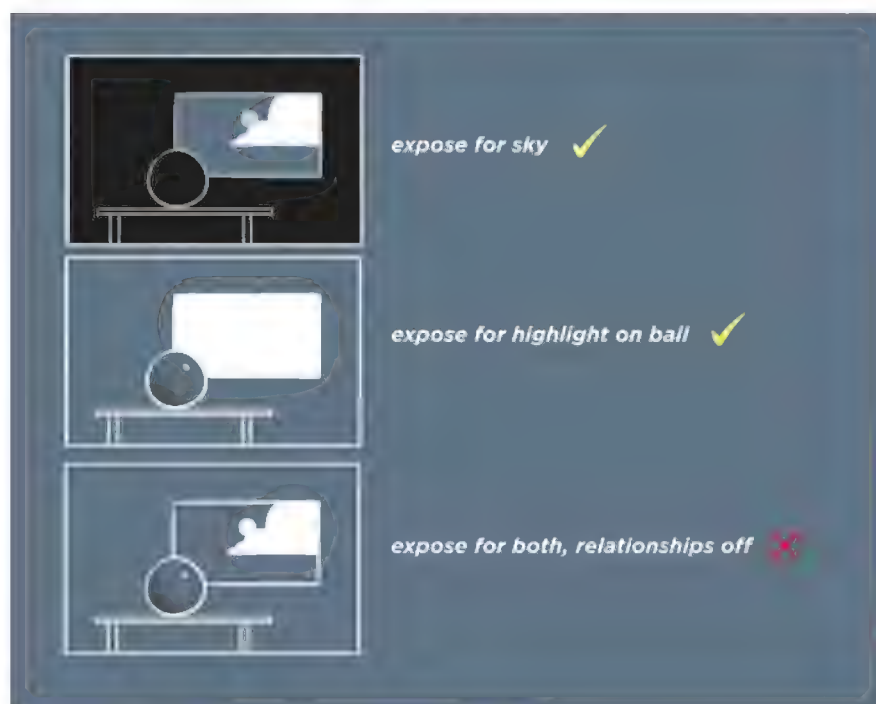

Fig. 1 (above). A scene of a ball on a table in front of a window. By comparing values across the entire scene rather than copying values directly we can create and maintain accurate value relationships.

expose for sky ✓

expose for highlight on ball ✓

expose for both, relationships off ✗

Fig. 2 (opposite). Exposure is the amount of light let into the eye, or in photography, the camera sensor or film. Exposure determines the relative value relationships achieved through compression.
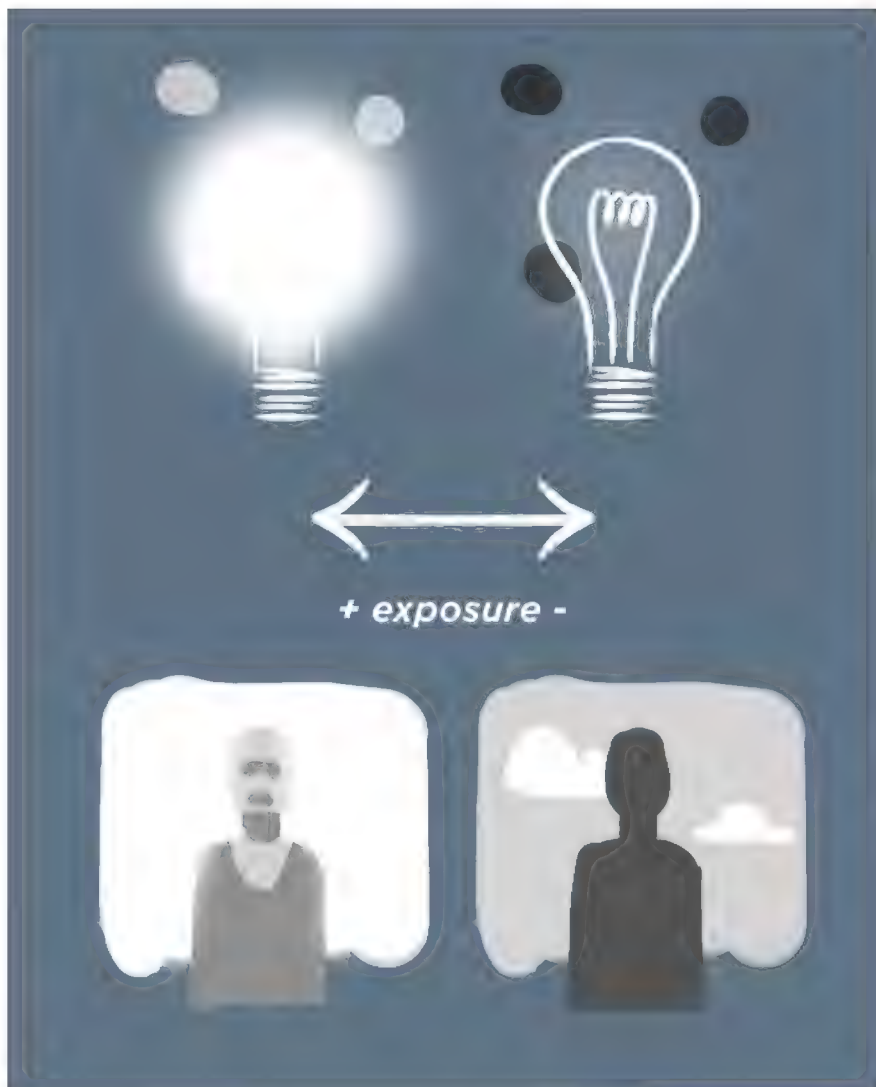
+ exposure -

To recap, we first decide what in the scene we want to show with the greatest amount of information. Say for example you are drawing a model from life with charcoal, and you want to capture the highlight on their earring. If you key to that highlight, or in other words set the exposure to that point, we would have to sacrifice some detail in the shadows because the value in reality is too far away from that highlight to express with the range possible with charcoal. How do we then accurately translate the values so that they are relatively correct and internally consistent, and also something we can express with the limited range that our medium is capable of? If you've ever used the posterize filter in Photoshop then you have some experience with value compression, but it is easier to have the computer run the calculation than it is to accurately compress values while composing a painting.

The solution is to rely on comparing values, and you will find that by making values that are similar even closer, and values that are far apart even more different, the values naturally start to compress through comparison. For example, if a real life scene we want to paint has a range of information from -1000 to 1000, and our paint value scale is only capable of 0 to 10, then each value step will represent a factor of 200! This shows why we need to keep the values subtle and controlled, since each jump represents a lot.
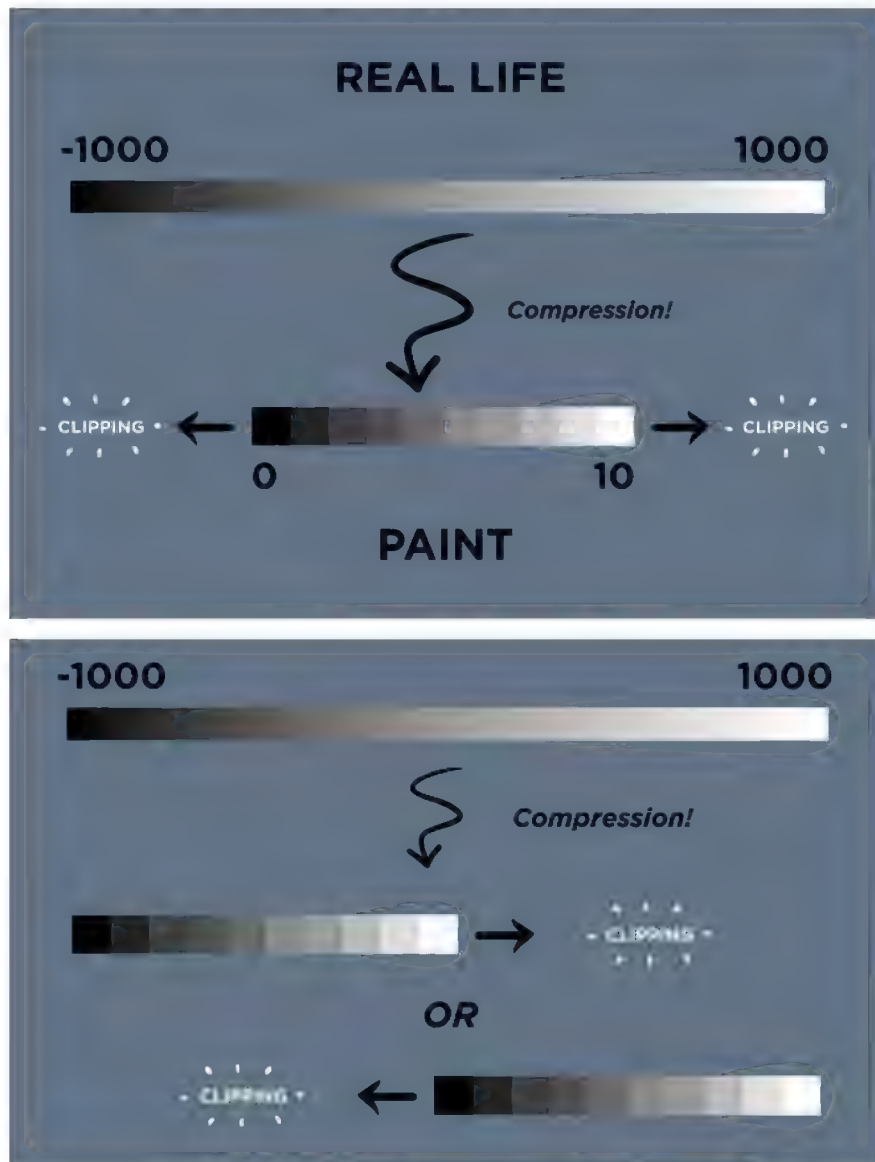

Fig. 5. It is possible to choose how to compress a scene depending on what the artistic idea requires.

When we look into lit areas of a scene and literally copy what we see, and then look into shadow areas and literally copy what we see, we make a double exposure much like a stylized HDR photograph. The reason that these types of images are often forgettable is that they lose all of the organization of value and color. With bright sunlight we have a choice to make: expose for the light or for the shadow? If exposing for the light, try using one value in the shadow and two in the light. This way we can get a ton of form information in the light and the flat shadow value is still relatively correct.
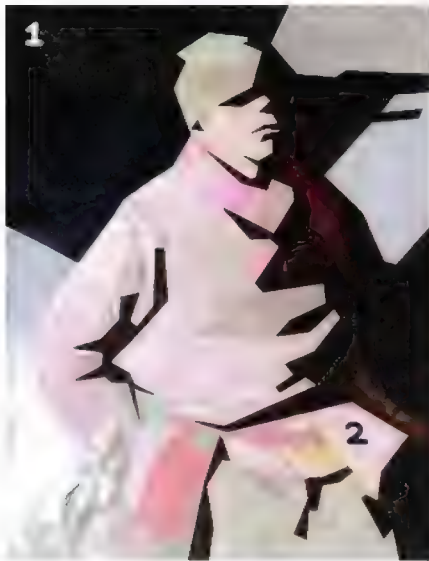

Fig. 6. Abram Arkhipov *Ryazan Coachman*, 1916. Exposed for the light. The areas of light and shadow are kept distinct and the light has more information than the shadow.

Fig. 7. Abram Arkhipov *The Ice Has Passed*, 1895. Exposed for the light.

If exposing for the shadow, try using one value in the light and two in the shadow. This way we can get brilliant color information in the shadow and the relationship with the overexposed light still makes sense.

In order to make a decision about exposing for either light or shadow in bright light we have to ask what our intentions are with the composition. Exposing for light allows a wide enough value range in the halftones to show form, so this might be a good choice if you want to emphasize the sculptural qualities of your subject. Exposing for the light often makes a lower key image overall because of the

increased value range in the lights and the flat, dark shadows. Chiaroscuro painting and artists such as Caravaggio are a great introduction to this approach.

Exposing for the shadow allows enough information in the shadows to show brilliant reflected light, so if your intention is to show a dazzling display of color, then you might want to expose for the shadows.
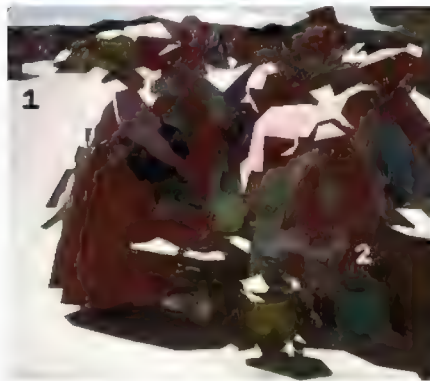

Fig. 8. Abram Arkhipov *At The Market*, (1862-1930). Exposed for the shadows.

Fig. 9. Abram Arkhipov *Along the River Oka*, 1890. Exposed for the shadows.

This will often lead to a higher key image overall because of the overexposed lights and inreased value and color range in the shadows. Impressionist artists such as Monet as well as Russian artists of the same period often used exposing for the shadow to explore color effects. One more consideration is simply how much of your subject happens to be in light vs. shadow. If the subject is backlit and only 10% of the form is hit by the light, then exposing for the shadow would be a natural choice. The opposite is also true: if most of the form is hit by light, then exposing for the light usually makes more sense. The science behind exposure and compression is the logic that drives technical decisions, and those technical decisions should always be in service of the creative statement.

If it seems like we can copy the values in dim or overcast light, we should still think about values in a relative way and compare then while working. For overcast days you can make a "balanced" exposure since the range of value isn't as extreme as with sunlight. In these situations, since most of the values will naturally hover around a middle value range where many hues have their most intense chroma, the intensity of local color can be best expressed, with a silhouette unintenterupted by the patterns of


Fig. 10. Giuseppe de Nittis *Westminster Bridge*, 1878. With overcast light, silhouette and local value become the focus rather than patterns of light and shade.

intense light and shade.

If we only paint things that seem to fit within the range of our medium then it is hard to learn comparative values, which is a fundamental skill. Being able to work comparatively is necessary not only for painting from life but for designing a composition and creating a convincing vision of reality while painting from imagination as well. Painting difficult subjects with large value ranges teaches this lesson and it should carry over to the other subjects where the need to compress is less obvious. If you only have experience painting indoors from evenly lit subjects, try heading outdoors and painting a variety of materials during a bright sunny day. As a bonus, since value is entirely dependent on exposure, and color is dependent on value, learning exposure is a great way to get more confidence and understanding with color.

Overall, light has a unifying effect on what it illuminates. When light falls across a form, it naturally groups the areas of light and shadow into distinct areas. Grouped values should be kept very close, and the areas of light and shadow separated in order to keep the illusion of light over form. When we choose an exposure and compress our values accurately based on comparative observation, the value groups fall into place, and the elements more crucial to the artistic statement like the drawing, shapes, and composition can be focused on like arranging simple strips of flat construction paper.

"The science behind exposure and compression is the logic that drives technical decisions, and those technical decisions should always be in service of the creative statement."
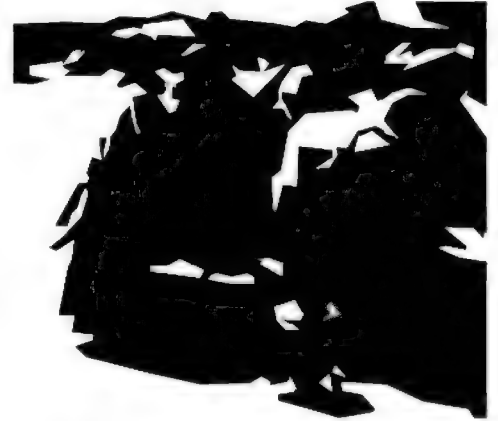
Figs. 11-12. With the values compressed and exposure decided the composition can now be focused on due to the light and shadow areas being separated into two simplified values.

Fig. 13. Joaquín Sorolla *Lunch on the Boat*, 1898. Exposed for the figures in the shadow inside the boat. The exposure is lowered just enough so that there is still some room for information left in the sky and water outside the boat.

05 SPECULAR HIGHLIGHTS

Have you ever noticed when looking at something that the highlight moves around when you move your head? Why does this happen? Why does it only happen with the highlight and not the rest of the lit area?

Fig. 1. For an animation demonstrating the movement of the specular highlights with the viewer, head over to this link: https://www.youtube.com/watch?v=siPK_EQoO4o

Fig. 2. Light bounces off objects and reaches our eye allowing us to see. For a specular highlight, the angle of incidence equals the angle of reflection causing a mirror like reflection The specular shows up where the surface normal of the object divides this angle equally in two.

The only reason we can see is because light reflects off objects and into our eye. There are two types of reflection: *Specular* and *Diffuse*. Specular reflection, or the highlight, is when the path the light takes to your eye is equal and opposite the angle it took to get to the object, like a mirror. Since the specular is a mirror like reflection of the light source, it will often reveal information about what is lighting the scene. For example, if it is a light bulb, you'll see a circular highlight in the shape of the bulb, if it is a fluorescent light, you'll see the long shape of the lightbulb tube wrapping around the form as if the object were a curved mirror.

As discussed in the chapter 2 on the Oreo Cookie Theory, when you expose for the lights, the specular highlights will often be part of their own value group noticably different from the rest of the light. Due to Newton's law of energy conservation, the mirror reflection of the light source will be the brightest part of the light.

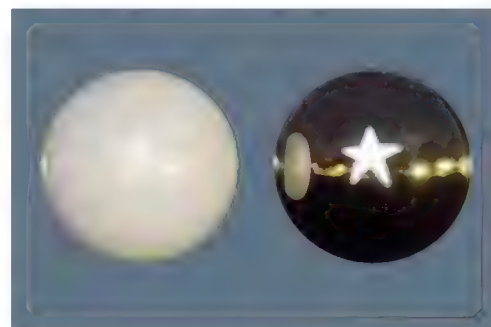*"Highlights move when we do because the angle the light needs to get to our eye needs to match the angle at which the light is hitting the object."*

Fig. 4. The shape of the light source can be seen in the specular reflection, in this case a star shape.

Highlights move when we do because the angle the light needs to get to our eye needs to match the angle at which the light is hitting the object. It's a lot like bouncing a pool ball to go into the pocket, and it can help to visualize it this way while painting. The angle that the ball takes into the pocket will equal the angle at which it hit the table. So logically, when we move, the angle that the light takes to reach our eye changes.
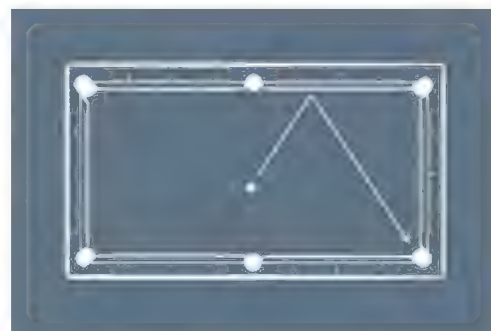

Fig. 5. (above) If the corner pocket moved, the angle at which you would need to hit the ball against the wall would change.

Fig. 6. (opposite) The highlight moves with the viewer. The light that forms the specular highlight reaches the eye in its current position at an angle equal and opposite its path to the object.
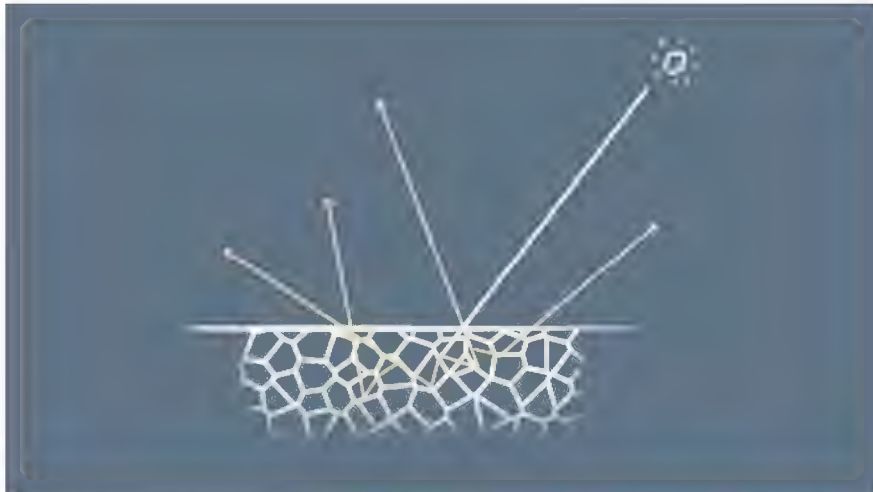
The other kind of reflection, diffuse reflection, is when the light goes beneath the surface, bounces around, and then comes back out in a bunch of different directions. Since the angle of incidence no longer perfectly matches the angle of reflection the pattern of light and shade is independent of the viewers position. Because some of the wavelengths of light get absorbed, what we finally see is a colored object regardless of where we look from.

Diffuse reflection is often misunderstood as only being the smoothness of the surface, this only determines how blurry the highlight is, not how mirror like it is. For example, even if you polish marble and make it perfectly smooth, it will never turn into a mirror because light is still scattering inside the object. Some of the wavelengths are also absorbed, and because of this only a portion of the electromagnetic spectrum is reflected back to the eye. This is what causes colored diffuse objects, but the specular highlight will not be colored in itself.

Fig. 8. As the material is polished the highlight becomes more focused, but the material will never turn into a mirror.

Colored metals, on the other hand, derive their colored reflections from an entirely different process relating to the absorption of photons by electrons. Non-colored metals have free electrons that reflect light at the same wavelength as the original light.

Since metals don't let any light inside the surface and have no diffuse component they are used to make mirrors. You can have a mirror with an uneven surface, thus a reflection that acts partially diffusely, but it is still not a diffuse material since no light goes inside.

Fig. 9. A specular reflection can start to act diffusely and become blurry because of an uneven surface. This is known as surface roughness. The light is still reflecting based on the normal of the plane it hits, but microfacets on the surface cause the directionality of the specular to become less focused.
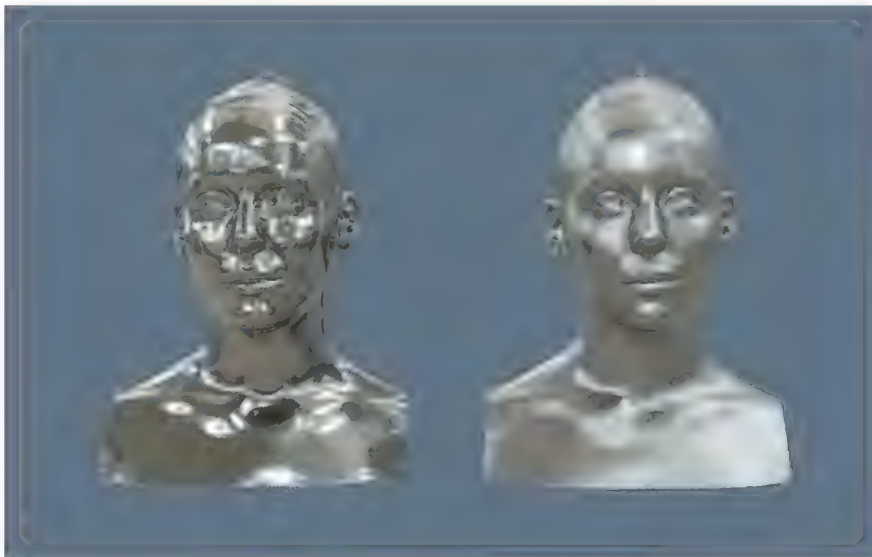

Fig. 10. A metallic material with a high surface roughness causes the reflection to become more diffuse, but light is still not going inside the surface and scattering.

How can we use this information practically in our paintings? Skin shows both types reflections at once, specular as well as diffuse. Here's the secret to using these principles effectively while painting: The highlights will dance down the form where two planes meet, the point at which the angle will reflect the light back into our eye. You can use this to confidently show form and express the details of the structural makeup of the face.
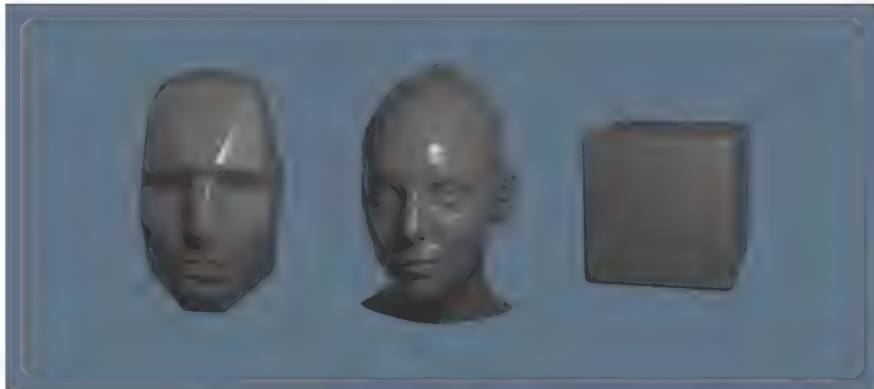
Fig. 11. Observe the areas where the speculars are present on the different forms in the same lighting condition.

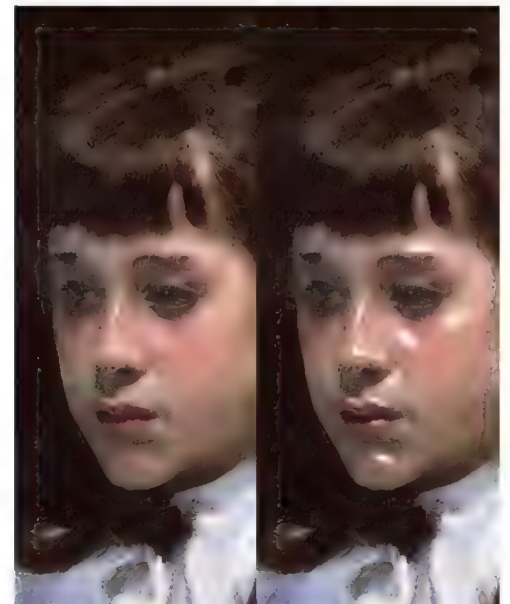Fig. 12. (opposite) Speculars tend to reflect back most where the planes meet.

Fig. 13. (above) John Singer Sargent *Young Girl Wearing a White Muslin Blouse*, 1885. The right side has the specular highlights accentuated. The nose has a prominent specular due to the fast plane change.

Figs. 14-15. The quick change in angle increases the likelihood that the light will be reflected towards the viewer. This is true for both convex and concave forms.

You can design these shapes in a way that is best to both make an interesting design compositionally as well as to show the structure of what you are painting. The better your knowledge of the planes of the face, the more confidently you can place the speculars where the planes meet. As the highlight gets further down and further from the light source, it will get darker, but it will never enter midtone territory (see chapter 2 on the Oreo Cookie Theory).

Fig. 16. Joaquín Sorolla *Portrait of John Gibson, R.A.*, ca. 1850.

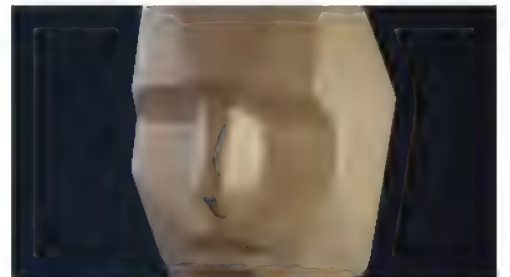Fig. 17. Joaquín Sorolla *Portrait of John Gibson, R.A.*, ca. 1850.

Fig. 18. For a free download of this planar head for reference, head to: https://gumroad.com/l/bkSqw
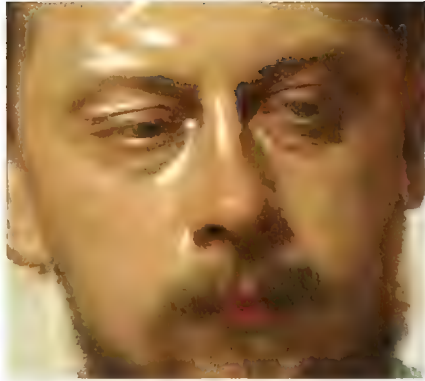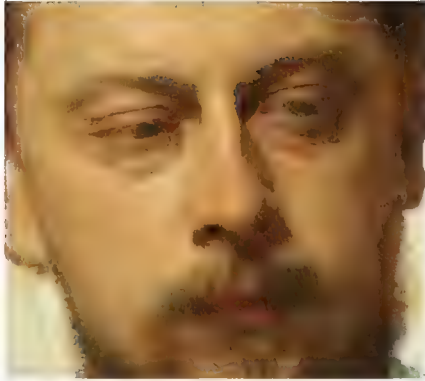
Fig. 19. Ivan Kramskoi *Actor Alexander Lensky Pavlovich as Petruchio in Shakespeare's "Taming of the Shrew"*, 1883.

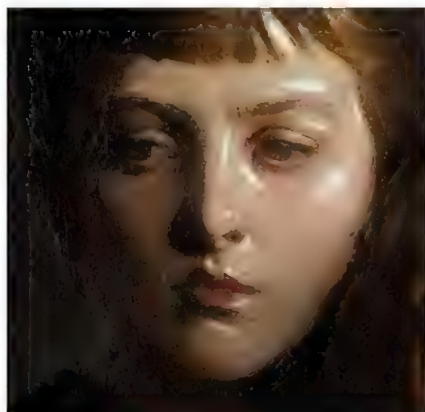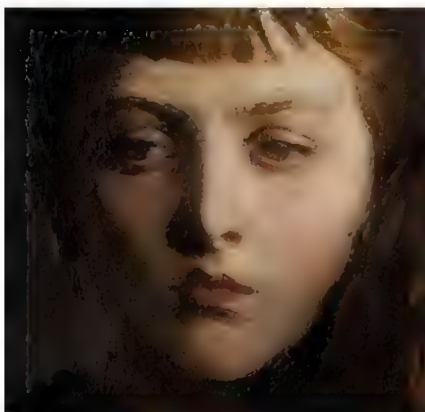Fig. 20. John Singer Sargent *Portrait of Charles Martin Loeffler*, 1903.

Fig. 21. Abbot Handerson Thayer *Brother and Sister (Mary and Gerald Thayer)*, 1889.

06 A HIERARCHY OF EDGES

Hierarchies of value and color in our paintings are so important and a hierarchy of edges adds a whole other dimension. Edges are particularly fun because we can use a mental checklist to sort out which should be hard, soft, and everything in between.

1. Where very similar values meet, it feels like a soft edge, and this can be accentuated to what is known as a "lost edge." Edges are strongly related to value. Remember that edges are relative, a soft edge from one painting can read as a hard edge in another. We can think of them as being part of a scale from 1-10 just like we would with value. The main idea is that there is no such thing as a "hard edge" independent of its context in a hierarchy.

Fig. 2. Lost edges occur where values become very close.

Fig. 1. A sphere against a background is a good way to start to observe edges due to the integration of the environment.

In the following page are examples that show this principle in action, one where the similar values of the shadows create lost edges, and one where the similar values of the midtones create lost edges. This should make clear the close relationship between edges and values. Exposure determines the method of compression, the compression determines the values, and the values influence the choice of edge handling. In the John Singer Sargent example, notice how the dark values get lost into the shadow entirely and how the arm in the academic study by Abbot Handerson Thayer gets lost into the torso.

Fig. 3. John Singer Sargent *A Spanish Figure*, ca. 1879-1880.

Fig. 4. Abbot Handerson Thayer *Male Torso*, ca. 1880.
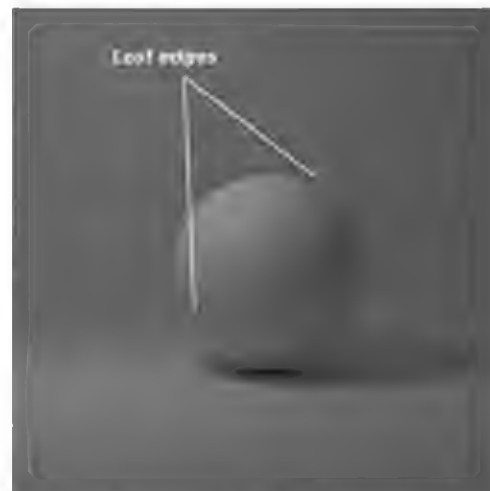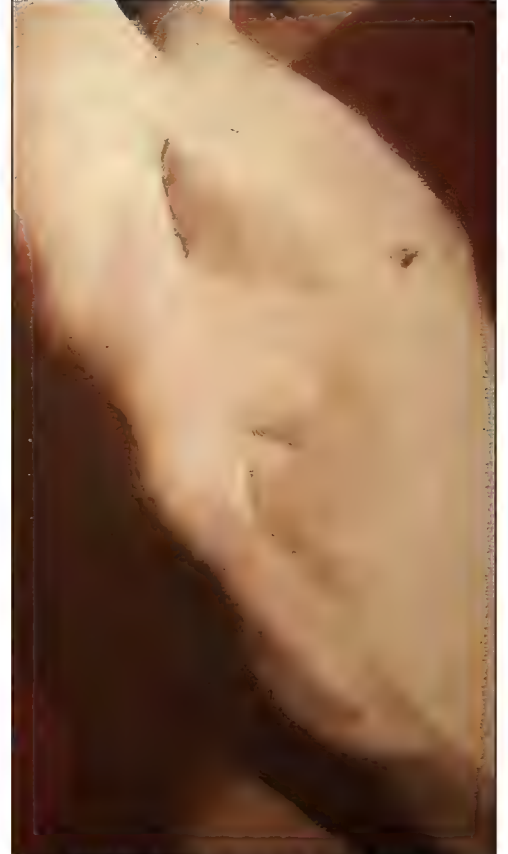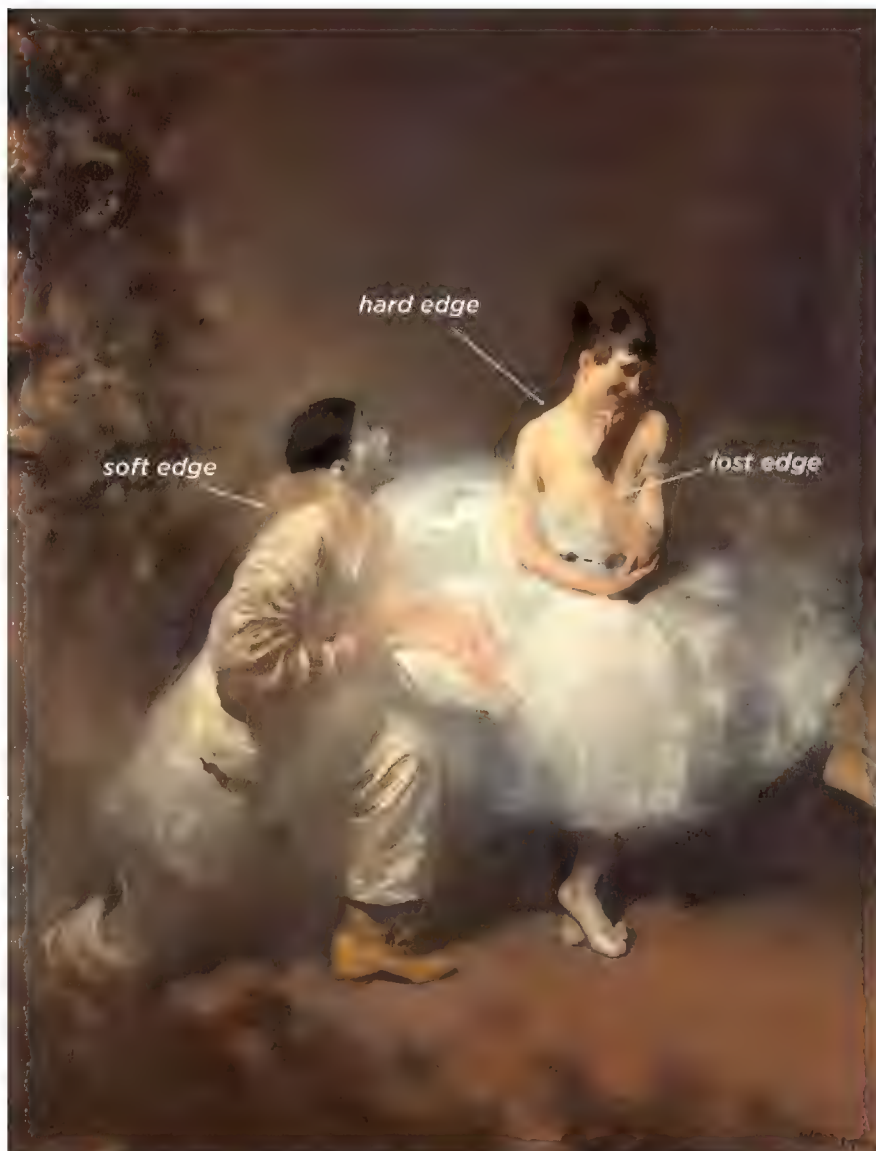
"*Exposure determines the method of compression, the compression determines the values, and the values influence the choice of edge handling.*"

soft edge

hard edge

lost edge

Fig. 5. Isaac Levitan *Trunk of Burgeoning Oak*, 1882. The shadowed branches have hard edges against the sky.

Fig. 6. Walter Ernest Webster *Puppets*, (1878-1959). Notice how hard the edge of the light on her soulder is against the background (and notice the lost edges from close values as well.) The cast shadow from her eye onto the highlight on her nose creates another hard edge. See *Chapter 4, fig. 13*, for another example of this effect from the cast shadow under the nose.

2. Where very different values meet, the edge feels harder. For example, a dark tree against a bright noon sky will have hard edges. Another situation where this principle can be found is where a dark shadow is cast over a bright specular highlight, the value contrast will often make it one of the hardest edges in the hierarchy. Often, to increase the perceptual edge hardness even further, the contrast can be increased along the edge. If you have ever used the unsharp mask filter in Photoshop, this operates under the same principle. Try sharpening an image in Photoshop and notice what happens to the values.

Fig. 7. (across) Umberto Coromaldi, *Camice Rosse (Red Shirts)*, 1898.

hard edge

soft edge

lost edge

Fig. 8. (above) The hard edge from the cast shadow of the hat onto the specular highlight on the nose is another example of the previous principle.

Fig. 9. Edge 1 appears extra hard because of relative value contrast, while edge 2 appears extra soft.

3. Edges are softer in the shadow, and harder in the light. Here's an example from Umberto Coromaldi, notice how the edges inside the shadow area from his hat, made up of ambient occlusion and secondary light bounces, are overall softer than the edges in the light side. Often the specular highlight, such as on the hat and nose, will be one of the hardest edges, depending on the focus of the painting.

Fig. 10. John Singer Sargent *Venetian Interior*, ca. 1880-1882.

Fig. 11. Isaac Levitan *Bonfire*, ca. 1895.

4. Scenes with lower light levels will have softer edges in general.

gradual form change

quick form change

Fig. 12. 1 shows the soft form shadow and 2 shows the harder cast shadow.

Fig. 13. The degree of hardness of form shadows depends on how fast the form turns.

5. Form shadows (when the form rolls away from the light) are soft, and the slower the plane turns, the softer the edge. For example, in this academic painting by Abbot Handerson Thayer, the form shadow gets tighter at the wrist to describe the box-like form, and softens up towards the deltoid to describe its roundness.

Hardness falls off as distance increases

Fig. 14. Shadows become softer the further they are from the shadow caster.

soft form shadow

hard cast

Fig. 15. Joaquín Sorolla *Portrait of John Gibson, R.A.,* ca. 1850.

Fig. 16. The cast shadow from the cube on the ground is harder than the cast shadow from the cube in the air.

6. Cast shadows (when light is blocked by an object) from a small light source or the sun are hard, and gradually get softer as the distance from the shadow caster increases.

Fig. 17. Vlaho Bukovac *Self Portrait*, 1914.

Fig. 18. John Singer Sargent *Madame Edouard Pailleron*, 1879.

7. Softer edges tend to give an overall effect of motion rather than a moment frozen in time. Notice how the soft edges in this portrait by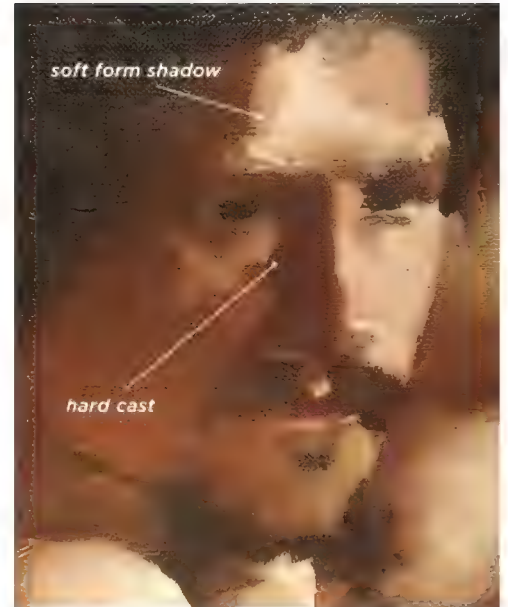 Vlaho Bukovac give it a sense of life, and how the Sargent sketch in figure 18 feels like it has more movement than the finished version.

8. Edges can be used to show material differences. Hair, fur, and delicate cloth will have softer edges compared to metal, for example. Notice how in these Sargent paintings the hair and fabric have softer edges than the skin.

This is non exhaustive! For example, edges can also simulate lens effects such as depth of field. This is not a list of rules, and using these principles creatively for the composition is most important, but take advantage of simple effective principles where you can find them. Again, edges are part of a hierarchy and a soft edge from one painting could read as a hard edge in another. Everything is relative, so compare!
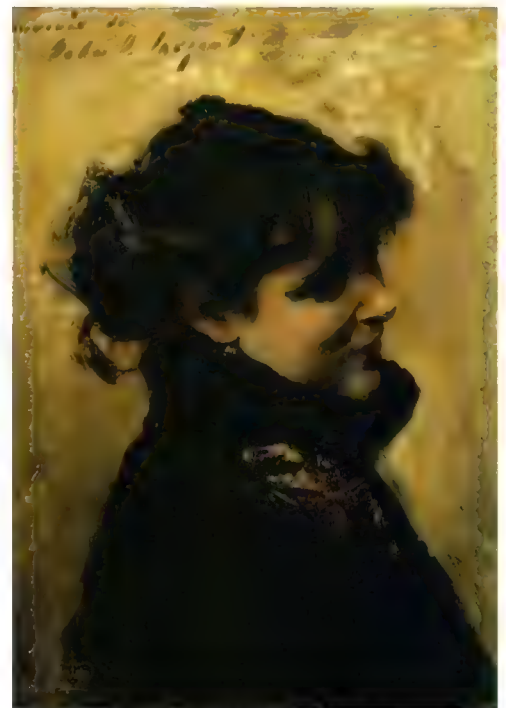

Fig. 19. John Singer Sargent *Madame Errazuriz*, ca. 1880-1802.

GLOSSARY

A

Abstract
Non-literal design principles that operate based on feeling. Independent of the object depicted.

Ambient occlusion
Darkening of areas where light is less likely to reach, such as wrinkles and crevasses. Important for overcast lighting situations and also rendering inside the shadows, depending on the exposure.

C

Chiaroscuro
A style of modelling popular in the Baroque period by artists such a Caravaggio characterized by high contrast light and shade. An example of exposing for the light for dramatic effect and a good introduction to clearly separating light from shadow. Good for showing form.

Comparative
A manner of working based on relationships and not absolute transcription of information.

Composition
A designed arrangement of abstract parts, either representational or non-representational, used to communicate a larger idea.

Compression
The act of reducing information while keeping relationships the same.

Contrast
The juxtaposition of two different states. Can refer to value, edge, color, narrative, psychological, etc. The degree of difference is relative based on comparison.

D

Diffuse reflection
When light rays are scattered in multiple directions rather than equal and opposite the approaching angle as in specular reflection.

Direct light
A lighting condition with a small or powerful light source causing a clear separation between light and shade. A wide choice of exposure is possible, accentuating either bounce light or form in the midtones. *See: overcast*

Directional light
A light that emits parallel rays, such as the sun. The sun behaves this way, and not like a point light, because it is so large and far away.

E

Exposure
The amount of light let into the eye, or in photography, the camera sensor or film. Exposure determines the relative value relationships achieved through compression.

F

Fall of light
The subtle range of value in the midtones where a point light falls off in intensity. Falloff is determined by the inverse-square law.

Focal point
Usually the area of greatest contrast in a composition, either value, edge, color, narrative, psychological, etc.

H

Halftones
The area which is hit by light excluding the specular highlights. When exposing for the light, subtle form modelling happens in this value range. Also known as midtones.

Hard edge
Where areas of very different value meet without much gradation.

Harmony
The simultaneous combination of separate parts for pleasing effect. Underlying themes that link otherwise separate elements lead to harmony.

HDR
High Dynamic Range, often refers to a fake method of photography achieving a large amount of information in both the light and shadow by combining standard exposures.

Hierarchy
A method of organization with cascading degrees of importance.

High key
An image that has a higher proportion of light values than dark values.

I

Impressionism
A 19th-century style of painting characterized by faithful reproductions of light and the retinal image. Often uses overcast light and shadow exposure to make room for color effects and minimize form, although exposing for the light was also used.

K

Key
Refers either to the design consideration of the overall lightness or darkess of an image (*see: high key and low key*), or the point at which the exposure and relative value relationships are set (as in keying the image to a certain value).

L

Lights
The area including the halftones and the specular highlights.

Lost edge
An area of similar value between two objects that cause them to perceptually merge.

Low key
An image that has a higher proportion of dark values than light values.

M

Macro
The big picture elements, usually referring to the composition or design as a whole

Metals
Materials that don't allow light to penetrate the surface.

Micro
The individual elements that comprise the larger composition or design

Microfacet
A model for computing surface roughness based on the degree to which surface normals deviate from the smooth surface.

N

Narrative
Suggestive of a story or emotion beyond the immediate.

Normal
An imaginary line perpendicular to a plane. Useful for plotting speculars and determining the value of each plane.

O

Overcast
A lighting condition where light is scattered to a high degree minimizing contrasts of light and shade and accentuating local color, ambient occlusion, and silhouette. *See: direct light*

P

Point light
A source of light that emits light rays equally in all directions, like a lightbulb.

Psychological interest
Refers to elements of a composition with a human component, such as hands, faces, expressions, etc.

R

Roughness
The degree of uniformity of a surface, the greater the roughness the blurrier the reflection.

S

Scattering
When light encounters something that causes it to change directions and deviate from a straight trajectory. In many materials with a high diffuse component, scattering mostly takes place under the surface.

Shadow
Area where light rays are occluded. Lit only by secondary sources of illumination such as bounce lighting and another light source.

Shape
One of the major building blocks of composition, an area of controlled contrast that can be distinguished as a self-contained discrete element or field. Can be expressed abstractly through outline or visually through mass and tone. Areas of similar tone will merge to an abstract 2D shape.

Soft edge
A transition between two different values with moderate degree of gradation compared to a hard edge.

Specular highlight
A mirror-like reflection of the light source where the light ray's angle of incidence equals the angle of reflection. Often the lightest value group in skin tones. The color and blurriness of the reflection depends on material properties.

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Ramón Hurtado *https://www.instagram.com/ramon.alex.hurtado/*

RECOMMENDED READING

Harold Speed *The Practice and Science of Drawing, Oil Painting Techniques and Materials*
John H. Vanderpoel *The Human Figure*
Solomon J. Solomon *The Practice of Oil Painting and Drawing*
James Gurney *Color and Light: A Guide for the Realist Painter*
Robert Fawcett *On the Art of Drawing*
Steve Huston *Figure Drawing for Artists*
John Collier *A Manual of Oil Painting*
Frank Fowler *Drawing in Charcoal & Crayon*
Evan Charteris *John Sargent*
John Milner *The Studios Of Paris: The Capital Of Art In The Late Nineteenth Century*
Andreas Bluhm *Light!: The Industrial Age 1750-1900, Art & Science, Technology & Society*
Emmanuel Schwartz *Gods and Heroes: Masterpieces from the Ecole des Beaux-Arts, Paris*
Mau-Kun Yim *Lessons in Masterful Portrait Drawing: A Classical Approach to Drawing the Head*
Richard Schmid *Alla Prima: Everything I Know About Painting*
Rosemary J. Barrow *Lawrence Alma Tadema*

RESOURCES & RECOMMENDED VIEWING

Craig Mullins
Gnomon Masterclass: Traditional Art Values Applied to Digital Art

David Briggs
http://www.huevaluechroma.com/

Ramón Hurtado
Studio Gossip: Conversations on Academic Drawing 1870-1889
https://www.youtube.com/watch?v=pCjx7Calujl

Thomas Scholes
Method for Checking Values
http://www.artofscholes.com/checkingvalues